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Financial Sector Development in Nigeria: Do Financial Reform, Output Size and Resource Dependence Matter?

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Abstract

The study examined the determinants of financial sector development in Nigeria in an error correction modelling framework, and with OLS for robustness checks, using data from 1980 to 2017. The results show that, banking sector reform, gross capital formation, government expenditure, interest rate spread, output size and trade openness were significant determinants of financial sector development in both the short- and long run. Proxy for economic misery was only significant in the ECM equation, while literacy and human development metric was significant in the long-run equation. Natural resource dependence, proxy by ratio of natural resource rent to GDP, was negatively related to financial sector development in Nigeria, though the coefficient was not significant at conventional levels. Economic misery, interest rate spread and inflation were observed to undermine financial development in Nigeria. The study recommends the continuation of the process of financial liberalization because of its immerse benefits of promoting competition amongst financial institutions with attendant positive effects of reducing interest rate gap. Domestic output, measured by the real GDP, should be enhanced with appropriate stabilising policy, whether fiscal or monetary policy. Additionally, efforts should be enhanced to limit the effects of macroeconomic instability on financial sector development. Lastly, the study recommends efficient management of natural resources to enjoy a non-declining contribution to the development of an inclusive financial system in Nigeria.

Key words: Financial development; Natural resource dependence; Economic misery

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INTRODUCTION

The benefits of a sound and virile financial system to attain broad-based inclusive growth have been extensively discussed by policy makers, development oriented agencies, and researchers alike. Numerous studies abound justifying the need for developing the financial sector of the economy. A well-developed financial system is crucial for attaining sustainable and balanced growth (Rioja & Valev, 2004; Roubini & Sala-i-Martin, 1992; Oyaromade, 2005; Akinlo & Egbetunde, 2010).This is premised on the theoretical transmission that financial system increases the availability of funds by mobilising idle savings, facilitating transactions and attracting foreign investments. A developed financial system can help achieve improved allocation of financial resources and enhanced risk management, transparency and corporate governance practices. Thus, financial development does not only improve growth prospects, it also enhances better distribution of economic opportunities amongst economic agents. This affords new businesses, such as first-time or low-income (with potentially low collateral) borrowers or small- and medium-sized enterprises (SMEs) easy access to financing through the process of financial intermediation.

One of the prominent features of Nigeria's economic growth initiatives is the conscious strategy to develop the financial sector. For instance, in the early 1970s, as a

result of the prevailing economic arrangement at that time, the financial sector was highly regulated. The government held controlling shares in most of the financial institutions, especially banking sub-sector. In 1986, the Structural Adjustment Programme (SAP) which was put in place to drive the economy from austerity to prosperity brought about the liberalization of the banking industry. The 2004 banking industry consolidation exercise was a major component of the National Economic Empowerment and Development Strategy (NEEDS) embarked on to drive the economic agenda of the government. In 2009, the global financial and economic crisis affected the Nigerian economy adversely, and part of the broad economic measures to respond to the adverse effects prompted the apex bank, the Central Bank of Nigeria, in collaboration with fiscal authorities, to adopt measures to avert a collapse of the financial system with a view to maintaining a relatively robust economic growth.

The momentum to build an efficient financial system was given a major boost between 1929-1951, and the period is often seen as the first attempt at financial reform in pre-colonial Nigeria. However, the severe banking crisis that occurred between 1940 and 1960 left the nascent financial system prostrate with the closure of several banking institutions (Moh & Eboreime, 2010). The post-independence experience with financial sector development in Nigeria was characterized by weak institutions that operated under the ambit of direct control policies which negatively affected financial intermediation.

Nigeria's efforts at promoting economic growth over the years have indeed highlighted the importance of financial development. However, the level of development of the financial system in Nigeria still remains low, despite government efforts. The low values reported for the various financial development indices in Nigeria confirm that its financial sector is underdeveloped or developing. For instance, credit to the private sector as a percentage of GDP which reflects financial depth averaged 15.4% between 1981 and 2017. So we might be tempted to ask the following questions: Why is the financial sector yet to be developed despite government efforts? What key factors influence the development of the financial sector? What are the major vehicles to prop-up the domestic financial system? This study seeks to provide answers to these questions.

Some authors have identified financial reform/ liberalization, as opposed to financial repression, as a critical factor in broadening financial sector development because it eases access to credit through process of financial inclusion (Mckinnon, 1973; Shaw, 1973; Anyanwu, 1995; Levine, 2005; Guiso, Sapienza, & Zingales, 2006; Tressel & Detragiache, 2008; Beck, 2011). Although, a number of economists are increasingly paying attention to the possibilities that domestic financial liberalisation could lead to undesired outcome, like financial crisis/ uncertainty (Demirgüç-Kunt & Detragiache, 1998; Prasad, Rogoff, Wei, & Kose, 2004; Kose, Prasad, Rogoff, & Wei, 2006). After over three decades of continued financial reform in Nigeria, financial depth and intermediation is still considered relatively low and shallow[1] compared with other global economic regions (Senbet & Otchere, 2005). While numerous studies, using various methodologies, have found evidence that greater financial development has a positive causal impact on growth, what is less clear from existing research, however, is how best to achieve financial sector development and, more specifically, to what extent has policies of financial reform fostered financial development in Nigeria?

Furthermore, some studies have found a unidirectional causation from economic growth to financial sector development, suggesting that finance follows where enterprise leads (Robinson, 1952). In this regard, high level of financial sector development is associated with robust economic growth rate. Hence, economic growth becomes a potent determinant of financial development. Dependence on natural resources, on the other hand, has been found to undermine institutional quality, including efficiency of financial systems in some countries because it hinders incentive to save and invest (Beck, 2011; Kurronen, 2012).

A review of extant studies on determinants of financial sector development in Nigeria have mostly failed to take into account the influence of financial reform, output growth and natural resource dependence in their analysis. This has the potential to lead to bias in results and policy specification/recommendation due to the omission of key variables and thus have dire implication on the design and implementation of financial sector development strategies in the country. This study attempts to bridge this gap in knowledge.

Following the introduction, section two focuses on the stylized facts on financial development in Nigeria, while section three dwells on the review of literature. Section four provides an exposition on the theoretical framework, methodology and model specification. The fifth section relates to empirical analysis and discussion of findings. Finally, section six summarizes and concludes the paper.

1. FINANCIAL SECTOR DEVELOPMENTS: SOME STYLIZED FACTS

Financial sector is instrumental to achieving both short and long run economic performance through its intermediating activities in transforming and channelling

[1] The shallow financial depth applies to almost all SSA countries except for South Africa (Ndikumana, 2000; Levine, Loayza and Beck, 2000).

deposits from the surplus economic units to the deficit units. Financial development connotes improvements in the functioning of the financial sector. These include increased access to financial intermediation, greater diversification of opportunities and options, improved information quality, and better incentives for prudent lending and monitoring and improved risk management practices.

Based on its importance in accelerating economic growth, financial sector development has attracted keen interest of governments of most countries in the performance of their financial markets, (Ewah, Esang, & Bassey, 2003). Economic growth in a modern economy hinges on an efficient financial sector that pools domestic savings and mobilizes foreign capital for productive investments, (Bekaert, Harvey, & Lundblad, 2005). Financial reform is expected to build and foster a competitive and healthy financial system to support financial development and avoid systemic distress. Pundits argued that as financial sector develops, the benefits trickle down to the poor even as the economy develops (Jalilian & Kirpatrick, 2007; Odhiambo, 2010a/b). Since the introduction of SAP in 1986, Nigeria began to implement financial sector reform as part of broader market-oriented reforms. The objective of the reforms was to build a more efficient, robust and deeper financial sector. Although, the financial sector seems to have improved since the commencement of reforms, the depth is still remains questionable.

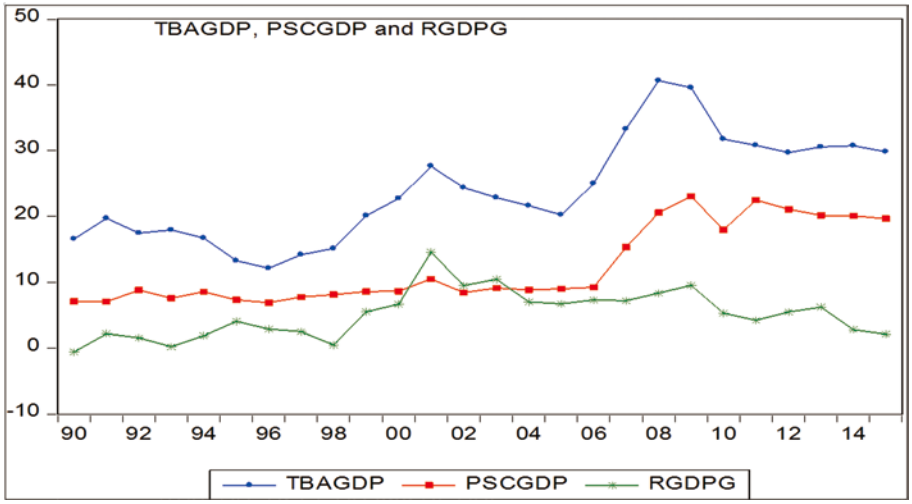

Figure 1
Relationship Between TBAGDP, PSCGDP and PSCGDP
Source: Adapted from Eboreime,M.I, et al (2016)

Figure 1 portrays some form of co-movement between total banking assets to GDP (TBAGDP) and real GDP growth (RGDPG). For instance, the respective peaks in TBAGDP in 1991, 2001 and 2009 correspond favourably well to thatof RGDPG. Similarly, at several points in time when TBAGDP fell, we note that RGDPG fell as well. Thus, economic growth seems to be a driver of TBAGDP. The trend in TBA largely reflects the performance of savings which has influences the stability of the financial system.

The trend noticed in ratio of private sector credit to GDP (PSC) represents a significant level shift and it shows a steady rise following the banking consolidation exercise in 2005, which resulted in an upswing in economic activities, while the RGDP reveals that the global economic crisis of 2008/2009 triggered slower growth in the Nigerian economy that has persisted to date. Furthermore, the recent plunge in crude oil prices starting from July 2014 affected economic activities in Nigeria to the extent that the economy showed signs of weakness in 2015 and slipped into recession in the first quarter of 2016 up until a dismal economic growth was recorded in the second quarter of 2017, after 4 consecutive quarters of negative growths.

Figure 2 indicates that the co-movement between market capitalization/GDP (MKCGDP) is largely inverse in nature. In the long term (the period covered by the study), the currency in circulation to GDP ratio (CICGDP) and RGDP trended in the same direction, while both the broad money supply to GDP ratio (M2GDP) and the market capitalization to GDP ratio (MKCGDP) diverged from RGDPG in the long-run. This posture is aptly captured in Figure 3, suggesting that level of financial depth may not necessarily reflect the rate of economic growth in most African countries. This calls for the adoption of effective policy thrust to enhance the finance-growth nexus in the continent, like it is for advanced economies, where finance sufficiently explains economic growth trajectory.

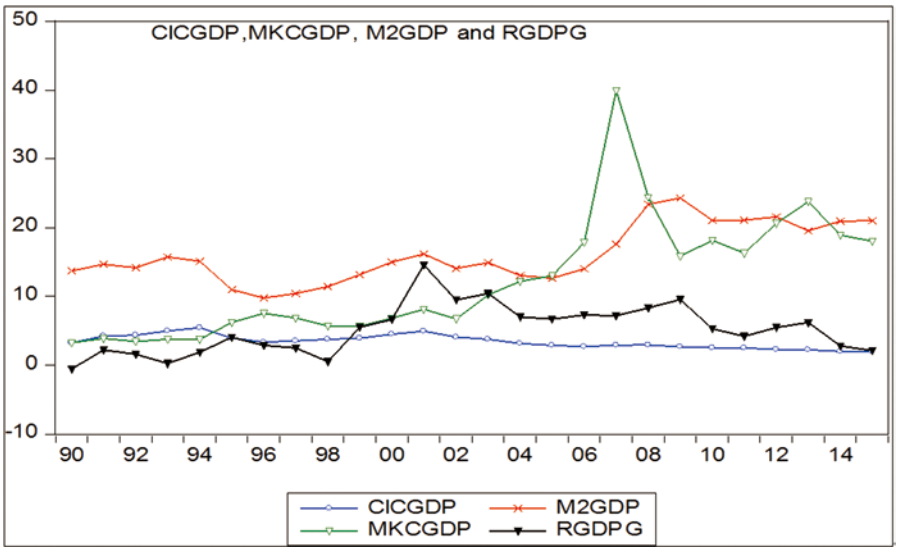

Figure 2
Relationship Between CICGDP, M2GDP, MKCGDP and RGDPG
Source: Adapted from Eboreime, M.I, et al (2016)

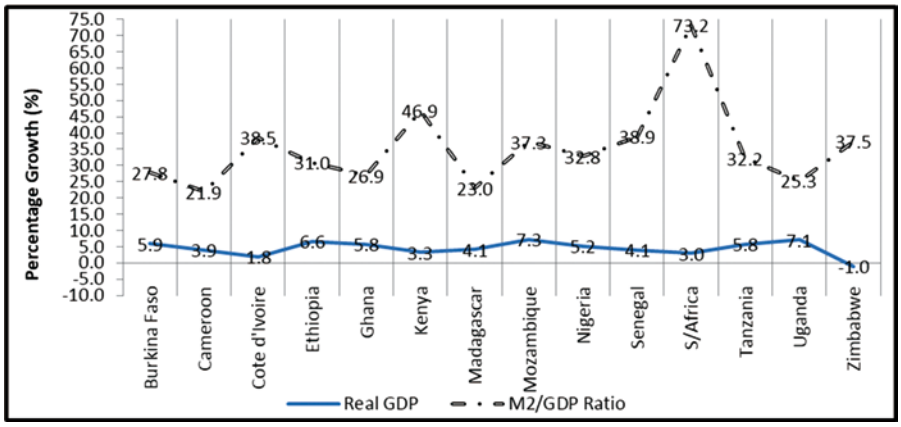

Figure 3
Comparative Statics: Average GDP Growth and Financial Depth, 1990 – 2011
Source: Authors, but underlying data from the WDI (2015)

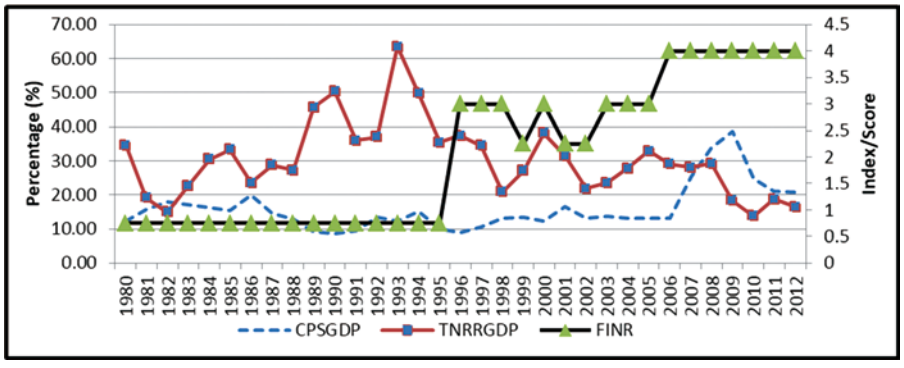

Figure 4
Linking CPSGDP, TNRRGDP and FINR
***Source:* WDI, CBN;** CPSGDP = Domestic credit to private sector (% of GDP); TNRRGDP=Total natural resources rents (% of GDP); FINR = Financial Reform Score.

Trend of CPSGDP (domestic credit to private sector as a % of GDP)and TNRRGDP (total natural resources rents as a % of GDP) showed a relatively inverse relationship, especially in the early 1980s to period before the 2007 global financial crisis, after which credit to private sector falls after a reasonable period lag decline

in financial depth. This effectively suggests that the relationship between natural resource rent and financial development is mixed. Some authors like Auty, 2001; Gylfason, 2004; Bakwena and Bodman, 2008; Beck, 2010) believe that natural resource dependence impedes the growth of the financial sector. Others like Iyoha, 1992; Beck, 2011; Kurronen, 2012 observed that collectable revenue from natural resource can effectively be deployed to spur financial sector development. On the other hand, trend in financial reform (FINR) systematically mirrors movements in financial depth, captured by domestic credit to private sector (% of GDP). This may indicate that years of financial sector reform has enhanced the development of the Nigerian financial system.

2. REVIEW OF RELATED LITERATURE

Various authors agree on the importance and benefits of developing the financial system, however, there is no consensus on what constitutes the determinants of financial sector development in various jurisdictions, as different variables have been identified by various authors as significant determinants of financial sector development.

Studies by a number of researchers, known as the proponents of the 'demand-following hypothesis' found that economic growth has a unidirectional causation on financial development. These theorists - Jung (1986); Odhiambo (2004); Ang and Mckibbin (2007) – highlighted that economic growth leads to financial development in both developed and developing countries.

Others like Greenwood and Jovanovic (1990) documents that, as the economy grows, the costs of financial intermediation decrease due to rigorous competition, thereby making funds available for investment in the financial sector. The importance of growth for financial development has been addressed in Levine (2005). Blanco's (2009) study found that financial development does not have a causal effect on growth, but economic growth leads to financial development. In a similar vein, Hurlin and Venet (2008), using a data set for 63 countries conducted a Granger causality test and found out that the line of causation flows from financial development to growth.

Mckinnon-Shaw (1973) developed a hypothesis which suggest that interest rate in the case of financial repression negatively affects financial sector development. The vital tenet of this hypothesis is that a low or negative real interest rate will discourage saving. They associate low or negative interest rate with financial repression and posit that a liberalized financial system will induce an increase in saving, thereby promoting financial intermediation and development of banking sector. Hence, the McKinnon-Shaw model of financial repression points out that a lower deposit rate of interest discourage households from holding deposits that would be used to finance productive investment. This implies that government's repressive policy towards financial systems such as interest rate ceilings will retard financial development. However, when the financial sector is deregulated, competition among banks will cause a rise in deposit rate of interest and encourage savings. Thus generally, a rise in interest rate spread- the difference between lending rate and deposit rate, will cause a fall in savings and a decline in financial development.

Empirical works have shown that financial development indicators could be influenced by bank reform or financial liberalisation, economic growth, monetary policy rate, trade openness and remittance inflow. Tressel and Detragiache, (2008) found that banking sector reforms led to financial deepening in 91 countries studies over 1973–2005 periods, but these were countries with institutions that places checks and balances on political power. Guiso, Sapienza and Zingales, (2006) argued that bank deregulation, specifically the removal of credit and entry constraints in the Italian financial system led to improved access to credit and lower gap between deposit and lending interest rates due to increased competition. Bekaert, Harvey and Lundblad, (2005) find that financial liberalisation deepens the financial system. This is because financial reforms stimulate financial intermediation through improvement in risk management, entrance of efficient foreign banks, while also boosting the offering of new financial instruments and services. Anyanwu, (1995) found financial reform to have deepened the financial sector in Nigeria, using M2/GNP as measure of financial development. Soyibo, (1994) observed that financial depth measured by M2/GDP fell immediately after financial liberalisation in Nigeria, notably 1987-1989, but however rose during the 1990 and 1991 periods.

The literature is replete with studies on financial development and economic growth Studies by Murinde and Eng, (1994) and Obstfeld, (2009) opined that financial development is a concomitant to economic growth. Goldsmith's study in 1969 was the first to describe the existence of a positive relationship between financial development and GDP per capita. King and Levine, (2005) also found a positive and significant relationship between several indicators of financial development and growth in GDP per capita, using mostly monetary indicators to represent banking sector size. Levine and Zervos, (1996) observed a positive partial correlation amongst financial development indicators (stock market, financial depth) and GDP per capita growth.

Odhiambo, (2008), using cointegration and error-correction techniques, reveal that there is a distinct unidirectional causal flow from economic growth to financial development, and warns that any argument that financial development unambiguously leads to economic growth should be treated with extreme caution.

Meanwhile, King and Levine, (1993b) work was on the relationship between financial intermediation and economic growth, using cross-country model. Their result suggests that a positive association exist between measures of macroeconomic performance and financial development indicators. The study employed four (4) financial indicators and four (4) growth indicators.

Saaed and Hussain (2015) examine empirically the causal relationship among financial development, trade openness and economic growthbyusing vector autoregressive techniquein Kuwait for the period 1977-2012. The econometric methodology employed was the Cointegration and Granger Causality test. The stationarity properties of the data and the order of integration of the data were tested using both the Augmented Dickey-Fuller (ADF) test and the Phillip-Perron (PP) test. The variables tested stationary at first differences. The Johansen multivariate approach to cointegration was applied to test for the long-run relationship among the variables. Empirical results showed that all variables are I(I) and are significant at 1percent. .Cointegration analysis suggests that there is no cointegration vector among GDP, financial development and the degree of openness of the economy. Granger causality tests based on VAR models show that there is a causal relationship between economic growth and financial development and between the trade openness of the economy and economic growth. Implying support for growth-led financial development and support for trade of openness -led growth. Also, Money supply was the only instrument of financial development that was seen to cause trade openness.

Rehman, Ali and Nasir (2015) in their study investigated the relationship between the financial development, trade openness and economic growth in the Saudi Arabian economy from1971to 2012.They employed unit root tests, the co-integration test, the Granger Causality Test and the Vector Error Correction Model (VECM).The results from Johansen and Juselius co integration test underpins for the existence of long run relationship among the purported variables. Granger causality test exhibits unidirectional causality running from the trade openness to the economic growth in Saudi Arabia, economic growth was also found to cause financial development in the country. The results manifest that combined causality exists among the variables. The study advocates for the acceleration of financial development in tandem with enhancing the ambit of trade openness for stimulating the economic growth in the country.

Oke, Uadiale and Okpala (2011) examined the nexus between remittances and financial development in Nigeria from 1977 to 2009. They employed both the ordinary least squares estimation technique and the Generalized Method of Moments (GMM) estimator. Moreover, key diagnostic tests are carried out in order to ascertain model adequacy. They also used two indicators of financial development, namely: the ratio of money supply to GDP and the ratio of private credit to GDP .The results generally indicate that remittances positively and significantly influence financial development in Nigeria, with the exception of the ratio of private credit to GDP measure of financial development in the GMM estimation where the coefficient is insignificant. This implies that remittances augment liquid liabilities more than loanable funds in Nigeria, as remittances are likely used more for consumption purposes than for productive ventures in the country. They recommended that since remittances provide foreign exchange that is vital to both the internal and the external sectors of the economy, they should be encouraged via appropriate policy formulation and implementation. Financial intermediaries and institutions operating in Nigerian should also intensify the mobilization of remittances with the aim of making them important sources of loanable funds in the country.

Also, Sami (2013) examined the role of remittances and economic growth in banking sector development in Fiji using annual data from 1980-2010. The study found evidence of long run relationship between banking sector development, remittances and economic growth using bounds testing procedure. In addition, his causality analysis based on vector error correction model (VECM) and Toda Yamamoo Granger Non Causality test (1995) suggested that there was causality from economic growth and remittances to banking sector development. The study indicated that remittances inflows may not be only important for economic growth but also for development of banking sector. He asserted that it is thus, important for policymakers to ensure that remittances flow through formal-banking channels.

3. THEORETICAL FRAMEWORK, METHODOLOGY AND MODEL SPECIFICATION

The theoretical structure of this study on determinants of financial sector development rests chiefly on the 'demand-following hypothesis' whichargues that financial development is a by-product or outcome of growth in the real sector of the economy. According to this view, any progress in the financial system is simply a passive response to a growing economy. Proponents of this view like Robinson (1952) posit that financial development follows economic growth as a result of increased demand for financial services. He argues that where enterprise leads, finance simply follows, suggesting that it is economic development which creates the demand for financial services. Therefore, the lack of financial growth is a manifestation of the lack of demand for financial services, thus as the economy develops, the demand for financial services are created. In meeting these new demands, financial sector increases in depth and breadth.

Consequently, financial development becomes a function of real GDP growth.

Also, the financial liberalisation theorists hold that the process of liberalising a domestic financial system enhances monetary policy effectiveness which should result in improved intermediation efficiency, thereby supporting increased domestic savings which supports financial sector development. These authors (McKinnon, 1973; Shaw, 1973; Nissanke & Aryeetey, 1998; Guiso, Sapienza, & Zingales, 2006) argued that bank deregulation should improve access to credit due to removal of credit constraint, as well as lower interest rate spreads on the back of increased competition.

In addition, some authors observed that resource-based economies are characterised by relatively smaller banking systems and less liquid stock markets. Bakwena and Bodman, (2008); Beck, (2011); Serhan and Mohammad, (2013) provided evidence of resource-curse effect in financial development, showing that resource wealth is a drag on attaining private sector-led economic growth and broadened financial system.

From the theoretical framework and following the 'demand-following hypothesis', financial liberalisation theory, as well as the resource-curse hypothesis, Equation 1 shows that financial sector development is a function of output size (measured by RGDP), resource dependence (total natural resource rent as a % of GDP) and financial sector reform. This study employed the ratio of private credit/GDP (CPS) as proxy for financial development. CPS is often preferred to other measures in empirical literature, like M2/GDP, because it shows the extent to which the private sector relies on the financial sector for funds, and it excludes credit to the public sector (Tressel & Detragiache, 2008). The model to evaluate the determinants of financial development in Nigeria would be tested using error-correction modelling (ECM).

$$\Delta LFDt=\varphi_0+\varphi_1\Delta LRGDP_t+\varphi_2\Delta LFINR_t+\varphi_3\Delta LNRR_t+\delta[ECM]+\varepsilon_t \quad (1)$$

Where:

FD represents Financial Development, measured by credit to private sector of the economy;

RGDP is real GDP per capita to capture output size;

FINR is Financial Reform measure by IMF's index of policy of financial reform. We computed a simple average of five (5) of the seven (7) categories in the financial reform database developed by Abiad, et al (2010) to depict the extent of domestic financial reforms in Nigeria; and

NRR is natural resource rent as a % of GDP. A succinct discussion on difference between resource dependence and resource abundance can be found in studies by James (2014) and Stevens (2015). ECM is the error-correction term. The symbol L shows that the variables are in their log form, while the operator Δ represents first difference.

Variables included in the study as control are based on extant empirical results: trade openness, inflation, misery index, real GDP, secondary school enrolment rate, interest rate spread, government expenditure, and gross capital formation. The behaviour and dynamics of these control variables are available in leading journals and articles in economic literature.

Hence, Equation 1 is modified to yield Equation 2, which is our estimated model.

$$\Delta LFD=\varphi_0+\varphi_1\Delta LFINR_t+\varphi_2\Delta LMISIND_t+\varphi_3INF_t+\varphi_4\Delta LTRDOP_t+\varphi_5\Delta LRGDP_t+\varphi_6\Delta LSEC_t+\varphi_7\Delta LNRR_t+\varphi_8\Delta LINTSPR_t+\varphi_9\Delta LGEXP_t+\varphi_{10}\Delta LGCF_t+\partial[ECM]+\varepsilon_t \quad (2)$$

Where:

FD = Financial Development (measured by credit to private sector of the economy, which shows the actual intermediation of the banking sector, unlike M2/GDP that merely shows extent of monetisation of the domestic economy, which do not reflect the extent of financial intermediation of banks.

RGDP is real GDP (capture output size and level)

FINR is Financial Sector Reform measure by IMF's index of policy of financial reform;

NRR is natural resource rent as a % of GDP (a measure of resource dependence)

GEXP = total government expenditure (representing the fiscal policy stance)

TRDOP = trade openness (representing extend of openness in the economy)

GCF = gross capita formation (a measure of domestic investment level)

INTSPR = interest rate spread (representing the efficiency of the financial sector)

SEC = secondary school enrolment (proxy the extent of literacy and human development)

RGDP = real GDP (representing the size of the economy)

INF = inflation (representing monetary policy environment)

MISIND = misery index (representing the level of macroeconomic stability)

While this study employed the error-correction modelling (ECM) approach to ascertain the speed of adjustment from a short-run distortion to its long-run equilibrium, OLS method was also estimated to ascertain the long-run (level) function. The aim is to compare both results to further enhance policy formation relating to financial sector development in Nigeria. The idea is that, when a long run relationship exist among the variables evidenced by cointegration test results, it will be in order to estimate a long run equation using the conventional ordinary least squares (OLS) technique. On the other hand, the Error correction modelling would enable the study easily ascertain the speed of adjustment to long run steady state, amidst a short-run distortion in the model.

The study avoids spurious regression by conducting preliminary test for stationarity using the Augmented

Dickey Fuller (ADF), while appropriate cointegration technique would be employed to investigate the existence of a long-run relationship amongst economic variables. According to Asteriou and Hall, (2007), if the variables are cointegrated, they move together over time so that any disturbances in the short-run are corrected. This indicates that if two or more variables are cointegrated in the long-term, they may drift at random from each other in the short-run, but will return simultaneously to equilibrium in the long-run.

Annual time-series data employed ranging from 1980 to 2017 were drawn from Nigeria's National Bureau of Statistics (NBS) and Central Bank of Nigeria (CBN), except data on real per capita GDP and natural resource rent/GDP drawn from World Bank's World Development Indicator (WDI).

4. DISCUSSION OF EMPIRICAL RESULT

Under this section, we discussed the descriptive properties of the data employed as well as the correlation matrix between the variables of interest. We also discussed findings from empirical models after exploring the time series properties of the dataset to prevent spurious regression without policy implication of findings.

4.1 Descriptive Statistics and Correlation

The details of the data sets employed in this study are summarised in Table 1. Real GDP has the highest mean value, while financial reform index has the lowest mean value. During the period under review, the real GDP showed the highest volatility while misery index series showed the least volatility. The probability values from the Jarque-Bera statistic indicate that we can reject the null hypothesis of normal distribution for all the variables except financial reform index, interest rate spread, secondary school enrolment and trade openness which are normally distributed. In addition, all the data sets are positively skewed except government expenditure and interest rate spread which are negatively skewed.

Table 1
Descriptive Statistics

	FD	FINR	GCF	GEXP	INF	INTSPR	MISIND	NRR	RGDP	SEC	TRDOP
Mean	16.46	2.26	13.25	91.26	19.21	6.16	32.88	28.84	29500.54	30.57	50.78
Median	14.44	2.25	12.09	91.45	12.22	6.72	30.90	28.06	17267.34	27.07	52.79
Maximum	38.49	4.00	34.02	106.79	72.73	11.06	74.70	63.52	68397.10	48.00	81.81
Minimum	8.71	0.75	5.47	67.92	3.23	0.32	12.02	13.79	9441.63	13.60	23.61
Std. Dev.	6.47	1.43	6.92	8.39	17.15	2.87	14.59	11.21	21319.11	9.27	16.05
Skewness	1.57	0.05	1.75	-0.60	1.63	-0.45	1.13	0.97	0.78	0.71	-0.10
Kurtosis	5.77	1.27	5.82	3.58	4.70	2.32	4.05	3.98	2.02	2.55	2.02
Jarque-Bera	27.00	4.63	31.03	2.78	20.93	1.98	9.60	7.30	5.19	3.40	1.54
Probability	0.00	0.10	0.00	0.25	0.00	0.37	0.01	0.03	0.07	0.18	0.46
Observations	38	38	38	38	38	38	38	38	38	38	38

Source: Authors' computation using EViews9

The correlation matrix for the dependent and independent variables is shown in Table 2. Worthy of note is the negative correlation between the measure of financial development (FD), proxy by credit to private sector and misery index (MISIND), a measure of macroeconomic instability. This shows that high macroeconomic instability could likely hinder financial development. Furthermore, financial reform (FINR), human capacity development, proxy by secondary school enrolment and real GDP are positively correlated to financial development, but natural resource dependence, misery index, trade openness and inflation distort the level of development in the financial sector.

Table 2
Correlation Matrix

	FD	FINR	GCF	GEXP	INF	INTSPR	MISIND	NRR	RGDP	SEC	TRDOP
FD	1.00	0.55	0.10	0.30	-0.33	-0.02	-0.07	-0.53	0.64	0.57	-0.17
FINR	0.55	1.00	-0.30	0.03	-0.50	0.62	-0.25	-0.52	0.88	0.77	0.18
GCF	0.10	-0.30	1.00	0.48	-0.11	-0.35	-0.11	-0.26	-0.08	-0.18	-0.41
GEXP	0.30	0.03	0.48	1.00	-0.15	-0.18	-0.12	-0.45	0.08	0.00	-0.31
INF	-0.33	-0.50	-0.11	-0.15	1.00	0.00	0.91	0.58	-0.39	-0.33	0.05
INTSPR	-0.02	0.62	-0.35	-0.18	0.00	1.00	0.17	-0.02	0.53	0.43	0.43
MISIND	-0.07	-0.25	-0.11	-0.12	0.91	0.17	1.00	0.37	-0.05	-0.01	-0.03
NRR	-0.53	-0.52	-0.26	-0.45	0.58	-0.02	0.37	1.00	-0.57	-0.54	0.32
RGDP	0.64	0.88	-0.08	0.08	-0.39	0.53	-0.05	-0.57	1.00	0.94	-0.11
SEC	0.57	0.77	-0.18	0.00	-0.33	0.43	-0.01	-0.54	0.94	1.00	-0.30
TRDOP	-0.17	0.18	-0.41	-0.31	0.05	0.43	-0.03	0.32	-0.11	-0.30	1.00

Source: Authors' computation using EViews9

4.2 Unit Root and Cointegration Tests

To examine the properties of the data series, both Augmented Dickey-Fuller and Philip-Perron methods of unit root test were employed. The results from the Table 3, therefore, showthat all variables are not stationary at level. They are, however, stationary after they were first differenced. In other words, they are integrated of order one, I(1). Having known the order of integration of the variables, the next is to determine whether the variables are cointegrated.

The cointegration tests are done to determine whether our variables of interest are cointegrated or not, that is, whether they have a long-run relationship. From Table 4, we can observe that the variables are cointegrated. The trace test reports two cointegrating equations, while the maximum Eigen value test reports one cointegrating equation. The overall results, therefore, show that the variables of interest are cointegrated at 5% level of significance which implies that, there exists a long run relationship among the variables in the model. The next is to proceed to the estimation of long-run and short-run dynamic models.

Table 3
Unit Root Test Results

	Augmented Dickey-Fuller (Constant		Phillip-Perron (Constant)		
Variable	Level	First Difference	Level	**First Difference**	**Decision**
LGCF	-1.393	-6.403***	-1.323	-6.718***	I(1)
LGEXP	-0.202	-4.972***	0.010	-6.255***	I(1)
LINTSPR	-0.119	-5.486***	-0.459	-5.506***	I(1)
LNRR	-1.262	-4.530***	-1.449	-4.427***	I(1)
LSEC	1.761	-4.248***	1.761	-4.233***	I(1)
LRGDP	-1.584	-4.751***	-2.029	-4.776***	I(1)
INF	-0.714	-5.638***	-1.687	-6.345***	I(1)
TRDOP	-1.579	5.578***	-0.245	-5.745***	I(1)
MISIND	-2.024	-4.252***	-2.207	-4.159***	I(1)
LBANKRE	-1.382	-6.896***	-1.382	-6.924***	I(1)

Source: Authors' computation using EViews9
Note: ***, ** and * represent 1%, 5% and 10% level of significance respectively. Also, we focused on banking sector due to data constraint and more so, the banking sector occupies over 65% of total banking assets in Nigeria, as it is in other developing economies.

Table 4
Johansen Cointegration Test Results

	Trace Test k = 2				**Maximum Eigenvalues Test** k =2		
Ho	H_A	**(λ trace)**	**Critical values (5%)**	**Ho**	H_A	**(λ Max)**	**Critical values (5%)**
r ≤ 0	r > 0	150.460*	95.754	r ≤ 0	r > 0	74.219*	40.078
r ≤ 1	r > 1	76.241*	69.819	r ≤ 1	r > 1	30.514	33.877
r ≤ 2	r > 2	45.728	47.856	r ≤ 2	r > 2	19.564	27.584
r ≤ 3	r > 3	26.164	29.797	r ≤ 3	r > 3	15.063	21.132
r ≤ 4	r > 4	11.101	15.495	r ≤ 4	r > 4	10.891	14.265
r ≤ 5	r > 5	0.210	3.841	r ≤ 5	r > 5	0.2104	3.841

Source: Authors' computation using EViews9

4.3 OLS and ECM Regression Results

We conducted our empirical analysis using the error-correction modelling (ECM) approach to ascertain the speed of adjustment from a short-run distortion to its long-run equilibrium, and OLS method was also estimated to ascertain the long-run (level) function for robustness check. The R-Squared, which is the coefficient of determination, shows that, 80.5% (69.3%) systematic variation in the OLS (ECM) equation is explained by the explanatory variables included in the model. The joint significance of the model put together is highly impressive at the 1% level, showing that, the model has a very good fit and reliable for policy making. The Durbin Watson (DW) statistics shows absence of first-order serial correlation in the model. Additionally, the ECM term carried the appropriate negative sign and was statistically significant at the 5% level, suggesting that the short run disequilibrium values adjust to their long run equilibrium values by 65.01% per period.

From the empirical results, all the variables included in both the ECM and OLS models conformed to a-priori expectation in terms of sign of parameter estimates.

The coefficient of financial sector reform (FINR) captured by the scope of banking sector reforms (BANKRE) was statistically significant in both models. It was significant in the long-run (static) model and short-run dynamic (ECM) model at the 1% significance level. A 100% rise in scope of banking sector reforms will give rise to about 41.2% - 46.7% improvement in the level of financial development in Nigeria. The result shows

that, well-targeted reform in the banking sector would remarkably result in a deepened financial system. .

The coefficient of economic misery (MISIND), representing the level of macroeconomic stability, had a negative sign in both models, but was only significant in the ECM model at the 5% level, suggesting that, financial sector development is severely hampered amidst presence of massive macroeconomic distortions. The result shows that, a unit increase in economic (misery) instability would result in 12.5% distortion in rate of financial development in the short-run.

The coefficient of trade openness (TRDOP), was positive and highly statistically significant in both the OLS and ECM models. The result shows that 100% increase in trade liberalisation would result in 47% growth in financial sector development in Nigeria. This is remarkable, calling for the need to open the economy to attract external capital to bridge the saving-investment deficit in the country.

The coefficient of inflation (INF) was negative in both the long-run model and short-run model, although it was not statistically significant at conventional significance levels in both equations. This shows that, inflationary episode acts as a serious distortional factor on financial sector development. This outcome may be a viewed from the fact that, inflation reduces purchasing power, and hence may cause rational economic agent to hold more money for transactional/ precautionary purposes, thereby limiting preferences for savings which hinders the scope of financial intermediation.

The coefficient of real GDP, representing the size of the economy, was positive and highly significant in both the static and dynamic models; while it was significant at the 1% level in the OLS model, it was nonetheless significant at 5% in the model estimated within the ECM framework. The result effectively suggests the importance of output size for financial sector development. This is not far-fetched, as output size increases, employment and income paid to factors of production in generating the output also rises, which may encourage savings in formal financial sector.

The coefficient of secondary school enrolment used in this study to proxy the extent of literacy and human development in Nigeria was positive, but was only significant at the 10% level in the long run equation. The variable was not significant at conventional significant test levels in the ECM equation, though the sign of the parameter estimate was positive, suggesting level of literacy and human development influences the state of financial sector development in Nigeria.

The coefficient of gross capital formation (GCF), a measure of domestic investment level, was observed to be positive and significant at 10% and 5% levels in the ECM and OLS models, respectively. The results intensify the notion that, domestic investment level is a potent determinant of financial sector development in Nigeria.

The coefficient of government expenditure (GEXP), representing the fiscal policy environment, significant at the 1% significance level, but had mixed performance in terms of the sign of the parameter estimates. While the sign was positive in the long run OLS equation, it was however, negative in the dynamic ECM equation. The result suggests that fiscal policy has both inhibitive and spurring potential for financial sector development. The positive sign may mean that, government expenditures are essentially inward receipt by households, on the other hand, the negative sign may be deduced from the crowding out of private sector investment, with untold effects on households employment and income.

The coefficient representing interest rate spread (INTSPR) is negative and significant at 1% and 5% levels in both the ECM and OLS models, respectively. The results show that, a wider interest rate gap reduces financial sector development by an average of 12 – 20 percentiles at each successive time periods. Interest rate spread is the difference between the lending and deposit rates. A low deposit interest rate relative to the lending rates, for example, may act to discourage savings and financial intermediation.

The coefficient of natural resource rent/GDP, a measure of institutional quality and efficiency, was negative and not significant in both the long-run (static) model and short-run dynamic (ECM) model. The negative sign, however suggests that, dependence on natural resources undermines the development of the financial sector. Some extant studies show that resource-based economies are characterised by relatively smaller banking system, providing evidence of resource-curse effect in financial development, and that, natural resources undermine institutional quality, including efficiency of financial systems in some countries because it hinders incentive to save and invest.

Table 5
Empirical Results (OLS and ECM)

OLS					ECM				
Dependent Variable: LCPS					Dependent Variable: D(LCPS)				
Method: Least Squares					Method: Least Squares				
Sample: 1980 2017					Sample (adjusted): 1981 2017				
Included observations: 38					Included observations: 37 after adjustments				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**	**Variable**	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	-1.018461	1.190987	-0.85514	0.4009	C	0.12029	0.072253	1.664845	0.1101
LGCF	0.416009	0.195076	2.132546	0.0434	D(LGCF)	0.317424	0.168701	1.881582	0.0732
LGEXP	0.320764	0.102994	3.114393	0.0047	D(LGEXP)	-0.327344	0.109406	-2.992006	0.0067
LINTSPR	-0.207811	0.068038	-3.05435	0.0055	D(LINTSPR)	-0.128139	0.058336	-2.196579	0.0389
LNRR	-0.244891	0.223605	-1.09519	0.2843	D(LNRR)	-0.203239	0.14647	-1.387579	0.1792
LSEC	0.590613	0.33168	1.78067	0.0876	D(LSEC)	0.021994	0.484621	0.045383	0.9642
LRGDP	0.173157	0.03315	5.22343	0.0000	D(LRGDP)	0.933201	0.418107	2.231966	0.0386
INF	-0.048207	0.013461	-1.39286	0.1764	D(INF)	0.000735	0.001339	0.548654	0.5888
LTRD	0.466984	0.150441	3.104096	0.0058	D(TRD)	0.475244	0.226468	5.547103	0.0000
MISIND	-0.048379	0.034639	-1.39664	0.1753	MISIND	-0.12542	0.051041	-2.45724	0.0241
LBANKRE	0.412501	0.104423	3.95028	0.0012	D(LBANKRE)	0.466984	0.150441	3.104096	0.0058
					ECM(-1)	-0.650686	0.240226	-2.708643	0.0128
R-squared	0.804739	Mean dependent v		2.711341	R-squared	0.69344	Mean dependent va		0.01604
Adjusted R-squ	0.731516	S.D. dependent va		0.352046	Adjusted R-squ	0.554095	S.D. dependent var		0.23108
S.E. of regressic	0.182414	Akaike info criteric		-0.32514	S.E. of regressi	0.154304	Akaike info criterion		-0.63859
Sum squared re	0.798599	Schwarz criterion		0.123786	Sum squared r	0.523812	Schwarz criterion		-0.13975
Log likelihood	15.52745	Hannan-Quinn crit		-0.17205	Log likelihood	21.53668	Hannan-Quinn crite		-0.47074
F-statistic	10.99024	Durbin-Watson sta		1.807038	F-statistic	4.976413	Durbin-Watson stat		1.84895
Prob(F-statistic	0.000001				Prob(F-statisti	0.000825			

CONCLUSION AND RECOMMENDATION

The study examined the determinants of financial sector development in Nigeria, using data from 1980 to 2017. In order to do this, credit to private sector was used as proxy for financial development. Some variables selected from extant theory on financial development were used as explanatory variables. The OLS was used for long-run analysis following findings from the cointegration result that established the existence of a long run equation. The ECM was used to determine this relationship and correct the discrepancies between short-run disequilibrium and the long-run equilibrium. The study found out that: banking sector reform, gross capital formation, government expenditure, interest rate spread, output size and trade openness are significant determinants of financial sector development in Nigeria, as obtained in both the short- and long run. Proxy for economic misery was only significant in the ECM equation, while literacy and human development metric was significant in the long-run equation. The result also shows that, natural resource dependence, proxy by ratio of natural resource rent to GDP, was negatively related to financial sector development in Nigeria, though the coefficient was not significant at conventional levels. In turn, economic misery, interest rate spread and inflation were observed to undermine financial development in Nigeria. The study recommends the continuation of the process of financial liberalization because of its immerse benefits of promoting competition amongst financial institutions with attendant positive effects in the reduction of interest rate gap. Output, measured by the GDP, should be enhanced with appropriate stabilising policy, whether fiscal or monetary policy. Additionally, efforts should be enhanced to limit the effects of macroeconomic instability on financial sector development. Lastly, the study recommends efficient management of natural resources to enjoy a non-declining development of an inclusive financial system in Nigeria.

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